

Access DB# 61500

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: 3/1/2002
Art Unit: 1774 Phone Number 30 5-0788 Serial Number: 09/675201
Mail Box and Bldg/Room Location: CP3 11D30 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Organic Electroluminescent Device
Inventors (please provide full names): Sanae Tagami, Hidetsugu Ikeda,
Chishio Hosokawa, Takashi Arakane
Earliest Priority Filing Date: 9/30/1999

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

*Please search attached compound 17
(this compound is used in an
electroluminescence device.)*

*(see attached sheet
for R' - R'5)*

STAFF USE ONLY

Type of Search

Vendors and cost where applicable

Searcher: <u>EST</u>	NA Sequence (#) _____	STN <u>\$247.00</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>3</u> <u>(substantive)</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic <u>1</u> <u>(abstract)</u>	Br. Link _____
Date Completed: <u>3- -02</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>5</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>55</u>	Other _____	Other (specify) _____

wherein R¹ to R⁴ each independently represent an alkyl group having 1 to 20 carbon atoms or a substituted or unsubstituted aryl group having 6 to 30 carbon atoms; in one or both of a pair of groups represented by R¹ and R² and a pair of groups represented by R³ and R⁴, the groups forming the pair may be bonded through -O- or -S-; R⁵ to R¹⁶ represents hydrogen

atom, a linear, branched or cyclic alkyl group having 1 to 20 carbon atoms, a linear, branched or cyclic alkoxy group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aryloxy group having 6 to 30 carbon groups, a substituted or unsubstituted arylamino group having 6 to 30 carbon atoms, a substituted or unsubstituted alkylamino group having 1 to 30 carbon atoms, a substituted or unsubstituted arylalkylamino group having 7 to 30 carbon atoms or a substituted or unsubstituted alkenyl groups having 8 to 30 carbon atoms; a pair of adjacent groups represented by R⁵ to R¹⁶ and a pair of adjacent substituents to groups represented by R⁵ to R¹⁶ may form a cyclic structure in combination; and at least one of substituents represented by R⁵ to R¹⁶ comprises an amine group ~~or a substituted amine group~~.

=> file reg

FILE 'REGISTRY' ENTERED AT 17:22:09 ON 10 MAR 2002
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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STRUCTURE FILE UPDATES: 8 MAR 2002 HIGHEST RN 400002-69-9
DICTIONARY FILE UPDATES: 8 MAR 2002 HIGHEST RN 400002-69-9

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES
for more information. See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

The P indicator for Preparations was not generated for all of the
CAS Registry Numbers that were added to the H/Z/CA/CAPLUS files between
12/27/01 and 1/23/02. Use of the P indicator in online and SDI searches
during this period, either directly appended to a CAS Registry Number
or by qualifying an L-number with /P, may have yielded incomplete results.
As of 1/23/02, the situation has been resolved. Also, note that searches
conducted using the PREP role indicator were not affected.

Customers running searches and/or SDIs in the H/Z/CA/CAPLUS files
incorporating CAS Registry Numbers with the P indicator between 12/27/01
and 1/23/02, are encouraged to re-run these strategies. Contact the
CAS Help Desk at 1-800-848-6533 in North America or 1-614-447-3698,
worldwide, or send an e-mail to help@cas.org for further assistance or to
receive a credit for any duplicate searches.

=> d his

(FILE 'HOME' ENTERED AT 16:51:11 ON 10 MAR 2002)

L1 FILE 'LREGISTRY' ENTERED AT 16:51:17 ON 10 MAR 2002
STR

L2 FILE 'REGISTRY' ENTERED AT 17:01:39 ON 10 MAR 2002
0 S L1

L3 FILE 'LREGISTRY' ENTERED AT 17:01:55 ON 10 MAR 2002
STR L1

FILE 'REGISTRY' ENTERED AT 17:02:46 ON 10 MAR 2002

L4 21 S L3
L5 STR L3
L6 35 S L5
L7 STR L5
L8 1 S L7
L9 292 S L7 FUL
SAV L9 GAR201/A
L10 0 S L1 SSS SAM SUB=L9
L11 8 S L1 SSS FUL SUB=L9
SAV L11 GAR201A/A

FILE 'CAOLD' ENTERED AT 17:14:02 ON 10 MAR 2002
L12 0 S L11

FILE 'ZCAPLUS' ENTERED AT 17:14:09 ON 10 MAR 2002
L13 2 S L11

FILE 'LREGISTRY' ENTERED AT 17:14:14 ON 10 MAR 2002
L14 STR L1

FILE 'REGISTRY' ENTERED AT 17:17:51 ON 10 MAR 2002
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L16 9 S L14 SSS FUL SUB=L9
SAV L16 GAR201B/A

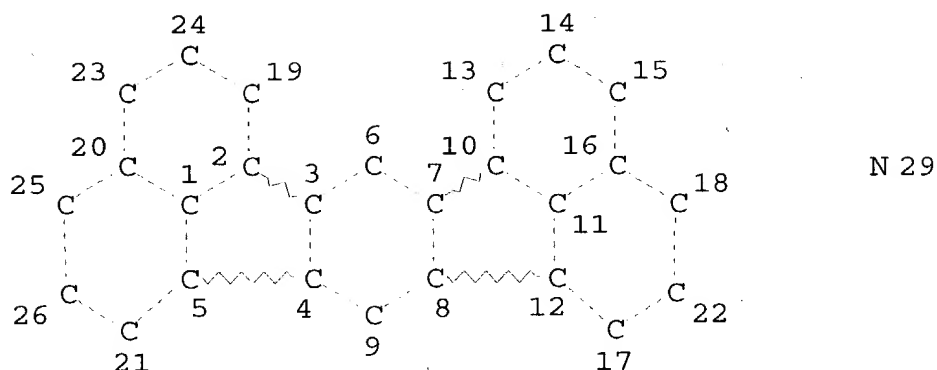
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L17 0 S L16

FILE 'ZCAPLUS' ENTERED AT 17:21:07 ON 10 MAR 2002
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L19 74406 S EL OR E(W)L OR (ELECTRO# OR ORG# OR ORGANO#) (2A) LUM!N?
L20 69 S L9
L21 6 S L19 AND L20
L22 6 S L13 OR L18 OR L21

FILE 'REGISTRY' ENTERED AT 17:22:09 ON 10 MAR 2002

=> d l16 que stat

L7 STR



NODE ATTRIBUTES:

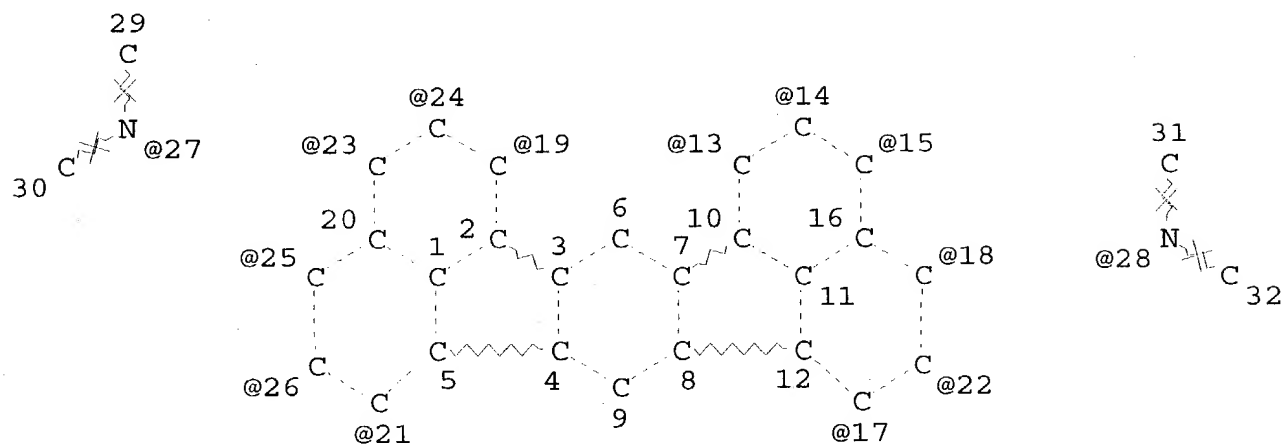
NSPEC IS RC AT 29
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 27

STEREO ATTRIBUTES: NONE

L9 292 SEA FILE=REGISTRY SSS FUL L7
 L14 STR



VPA 28-13/14/15/18/22/17 U

VPA 27-19/24/23/25/26/21 U

NODE ATTRIBUTES:

NSPEC IS RC AT 27
 NSPEC IS RC AT 28
 NSPEC IS RC AT 29
 NSPEC IS RC AT 30
 NSPEC IS RC AT 31
 NSPEC IS RC AT 32

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 32

STEREO ATTRIBUTES: NONE
L16 9 SEA FILE=REGISTRY SUB=L9 SSS FUL L14

100.0% PROCESSED 291 ITERATIONS
SEARCH TIME: 00.00.02

9 ANSWERS

=> file zcaplus

FILE 'ZCAPLUS' ENTERED AT 17:22:36 ON 10 MAR 2002
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FILE COVERS 1907 - 10 Mar 2002 VOL 136 ISS 11
FILE LAST UPDATED: 8 Mar 2002 (20020308/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

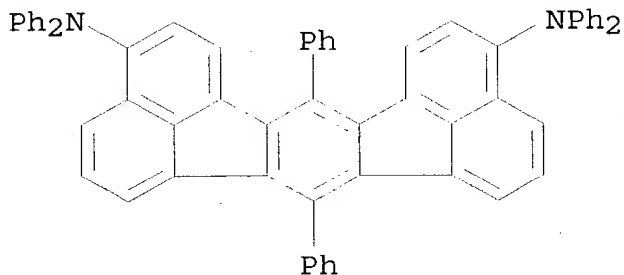
CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the CAS files between 12/27/01 and 1/23/02. As of 1/23/02, the situation has been resolved. Searches and/or SDIs in the H/Z/CA/CAplus files incorporating CAS Registry Numbers with the P indicator executed between 12/27/01 and 1/23/02 may be incomplete. See the NEWS message on this topic for more information.

=> d l22 1-6 ibib abs hitstr hitind

L22 ANSWER 1 OF 6 ZCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 2001:748181 ZCAPLUS
 DOCUMENT NUMBER: 135:296018
 TITLE: Organic **electroluminescence** device and
 organic luminescent medium
 INVENTOR(S): Fukuoka, Kenichi; Hosokawa, Chishio
 PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 60 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001076323	A1	20011011	WO 2001-JP2587	20010328
W: CN, IN, KR				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
JP 2001284050	A2	20011012	JP 2000-93976	20000330
PRIORITY APPLN. INFO.:			JP 2000-93976	A 20000330
AB	The invention relates to an org. electroluminescence device having a pair of electrodes and an org. luminescent medium layer held between them, wherein the org. luminescent medium layer at least contains an electron-transporting compd. and an anthracene deriv. of a specific structure, and has excellent heat resistance, long life, and the efficiency of luminescence is high. An org. luminescent medium preferably used for such an electroluminescence device is also disclosed.			
IT	364765-18-4 (org. electroluminescence device having org. luminescent medium layer of)			
RN	364765-18-4 ZCAPLUS			
CN	Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N,N,N',N',7,14- hexaphenyl- (9CI) (CA INDEX NAME)			



IC ICM H05B033-14
 ICS C09K011-06
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 ST Org **electroluminescence** device anthracene deriv
 IT **Electroluminescent** devices
 (org.; **luminescent** medium layer of)
 IT 2085-33-8, Alq3 14642-34-3 23102-67-2 122648-99-1
 172285-72-2 172285-82-4 186412-15-7 249512-71-8 331856-47-4
 364765-14-0 364765-16-2 **364765-18-4**
 (org. **electroluminescence** device having org.
luminescent medium layer of)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L22 ANSWER 2 OF 6 ZCAPLUS COPYRIGHT 2002 ACS

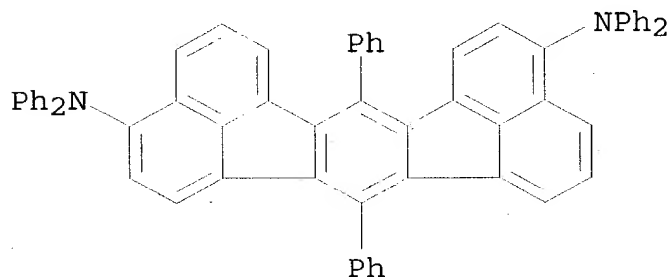
ACCESSION NUMBER: 2001:489561 ZCAPLUS
 DOCUMENT NUMBER: 135:84101
 TITLE: White organic **electroluminescence**
 element
 INVENTOR(S): Fukuoka, Kenichi; Tagami, Sanae; Hosokawa,
 Chishio
 PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 39 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001048116	A1	20010705	WO 2000-JP9227	20001226
W: CN, IN, KR				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
JP 2001250690	A2	20010914	JP 2000-328726	20001027
EP 1182244	A1	20020227	EP 2000-985879	20001226
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: JP 1999-372514 A 19991228
 JP 2000-328726 A 20001027
 WO 2000-JP9227 W 20001226

AB The invention refers to a white org. **electroluminescence**
 element comprising a pair of electrodes, and a luminescent layer,
 wherein the luminescent layer contains a blue luminescent material
 and a fluorescent compd. within at least one fluoroanthene skeleton,
 pentacene skeleton or perylene skeleton. The
electroluminescence element **emits** a white
light, exhibits high luminescence efficiency and has a long
 life, and thus has satisfactory performance capabilities for

IT practical use.
331965-27-6
(white org. **electroluminescence** element)
RN 331965-27-6 ZCAPLUS
CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N',7,14-hexaphenyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **electroluminescence** device
IT **Electroluminescent** devices
(white org. **electroluminescence** element)
IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 7429-90-5,
Aluminum, uses 7439-93-2, Lithium, uses 50926-11-9, ITO
55035-42-2 65181-78-4, TPD 123847-85-8, .alpha.-NPD
142289-08-5 331856-47-4 **331965-27-6**
(white org. **electroluminescence** element)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L22 ANSWER 3 OF 6 ZCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:247437 ZCAPLUS
DOCUMENT NUMBER: 134:273348
TITLE: Organic **electroluminescent** device
INVENTOR(S): Tagami, Sanae; Ikeda, Hidetsugu; Hosokawa,
Chishio; Arakane, Takashi
PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan
SOURCE: PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001023497	A1	20010405	WO 2000-JP6658	20000927

W: CN, IN, JP, KR

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,
NL, PT, SE

EP 1138745 A1 20011004 EP 2000-962882 20000927

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.:

JP 1999-279462 A 19990930

WO 2000-JP6658 W 20000927

AB The invention refers to an org. **electroluminescent** device
contg. a compd. with a fluoranthan skeleton and at least one
substituted amine or alkenyl.

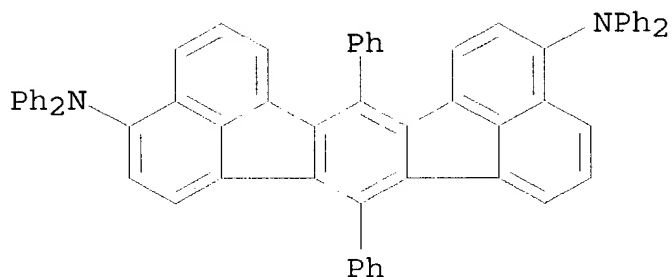
IT 331965-27-6 331965-28-7 331965-29-8

331965-30-1 331965-31-2 331965-33-4

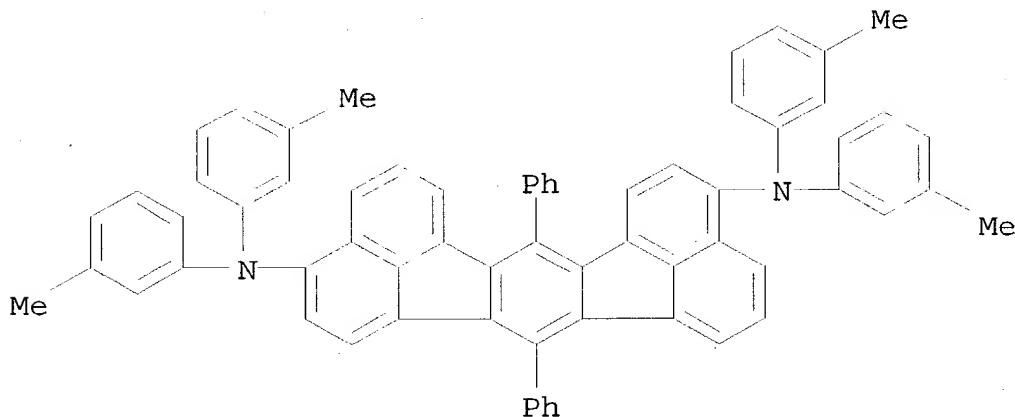
331965-34-5 331965-35-6 331965-36-7

(org. **electroluminescent** device)

RN 331965-27-6 ZCAPLUS

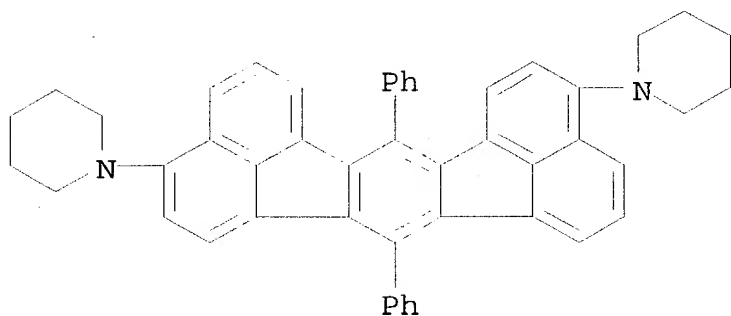
CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N',7,14-
hexaphenyl- (9CI) (CA INDEX NAME)

RN 331965-28-7 ZCAPLUS

CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N'-tetrakis(3-
methylphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)

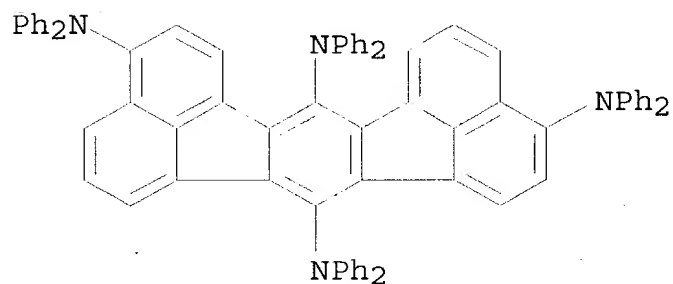
RN 331965-29-8 ZCAPLUS

CN Piperidine, 1,1'-(7,14-diphenylacenaphtho[1,2-k]fluoranthene-3,10-diyl)bis- (9CI) (CA INDEX NAME)



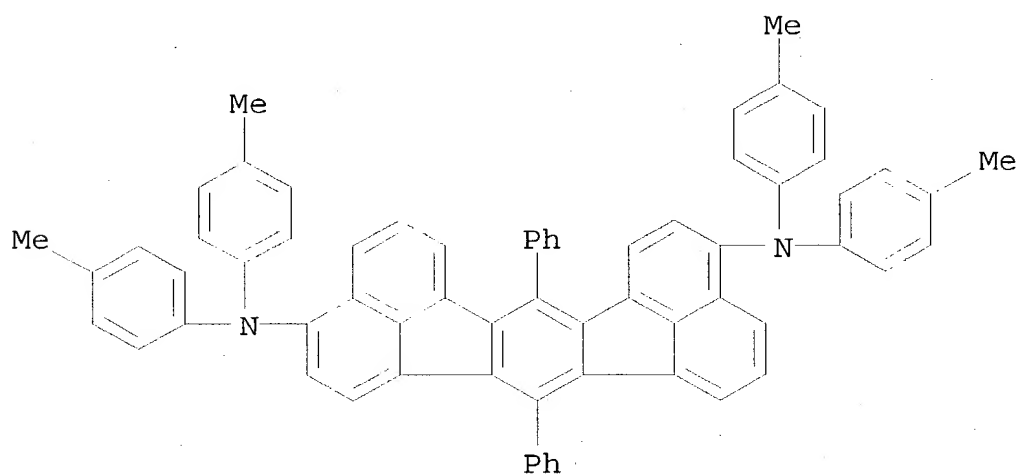
RN 331965-30-1 ZCAPLUS

CN Acenaphtho[1,2-k]fluoranthene-3,7,10,14-tetramine, N,N,N',N'',N''',N''',N''''-octaphenyl- (9CI) (CA INDEX NAME)

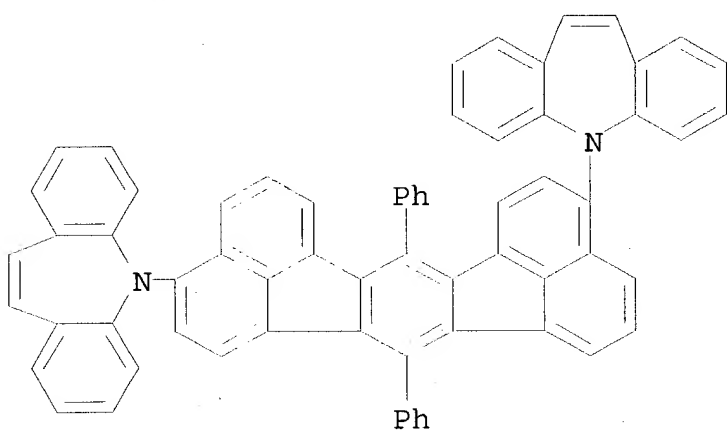


RN 331965-31-2 ZCAPLUS

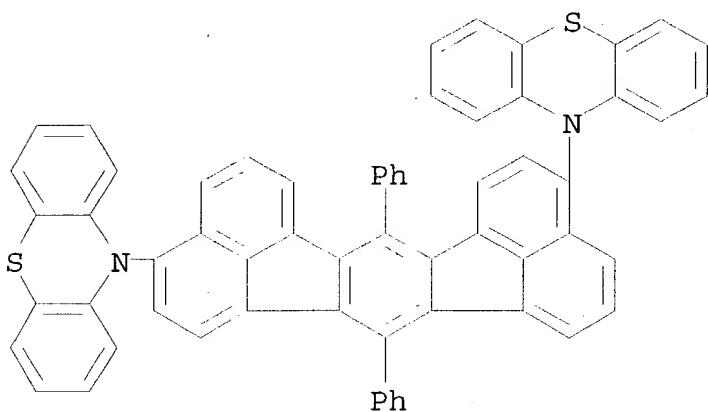
CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N'-tetrakis(4-methylphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)



RN 331965-33-4 ZCAPLUS
 CN 5H-Dibenz[b,f]azepine, 5,5'-(7,14-diphenylacenaphtho[1,2-k]fluoranthene-3,10-diyl)bis- (9CI) (CA INDEX NAME)

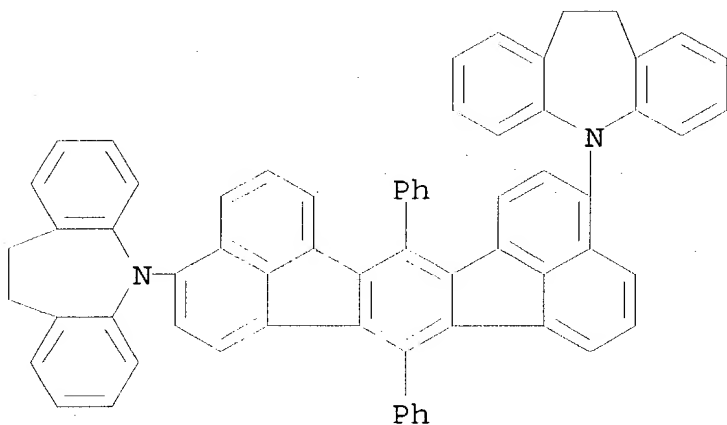


RN 331965-34-5 ZCAPLUS
 CN 10H-Phenothiazine, 10,10'-(7,14-diphenylacenaphtho[1,2-k]fluoranthene-3,10-diyl)bis- (9CI) (CA INDEX NAME)



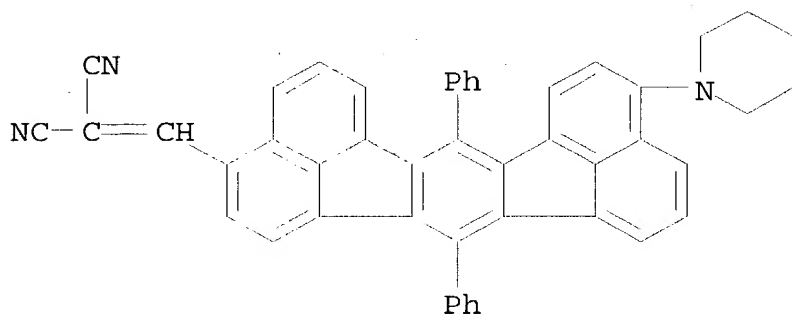
RN 331965-35-6 ZCAPLUS

CN 5H-Dibenz[b,f]azepine, 5,5'-(7,14-diphenylacenaphtho[1,2-k]fluoranthene-3,10-diyl)bis[10,11-dihydro- (9CI) (CA INDEX NAME)



RN 331965-36-7 ZCAPLUS

CN Propanedinitrile, [[7,14-diphenyl-10-(1-piperidinyl)acenaphtho[1,2-k]fluoranthene-3-yl]methylene]- (9CI) (CA INDEX NAME)

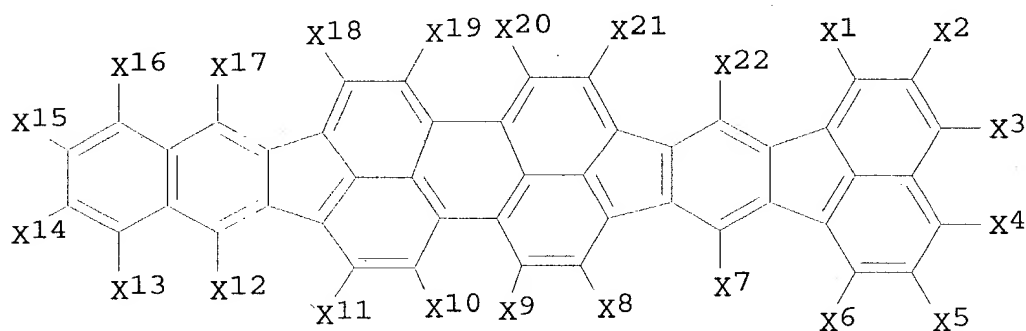


IC ICM C09K011-06
 ICS C07C013-62; C07C211-61; C07C217-92; C07C217-94; C07C229-74;
 C07C255-58; C07D295-12; C07D219-14; C07D223-26; C07D223-14;
 C07D221-18; C07D279-24; H05B033-14; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 ST **electroluminescent** device fluoranthan
 IT **Electroluminescent** devices
 (org. **electroluminescent** device)
 IT 199121-98-7 208598-26-9 **331965-27-6 331965-28-7**
331965-29-8 331965-30-1 331965-31-2
331965-32-3 331965-33-4 331965-34-5
331965-35-6 331965-36-7
 (org. **electroluminescent** device)
 REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L22 ANSWER 4 OF 6 ZCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 2000:77101 ZCAPLUS
 DOCUMENT NUMBER: 132:144218
 TITLE: Perylene derivatives and high-luminance organic
electroluminescent devices using them
 INVENTOR(S): Nakatsuka, Masakatsu
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 113 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000034234	A2	20000202	JP 1998-200859	19980715

OTHER SOURCE(S): MARPAT 132:144218
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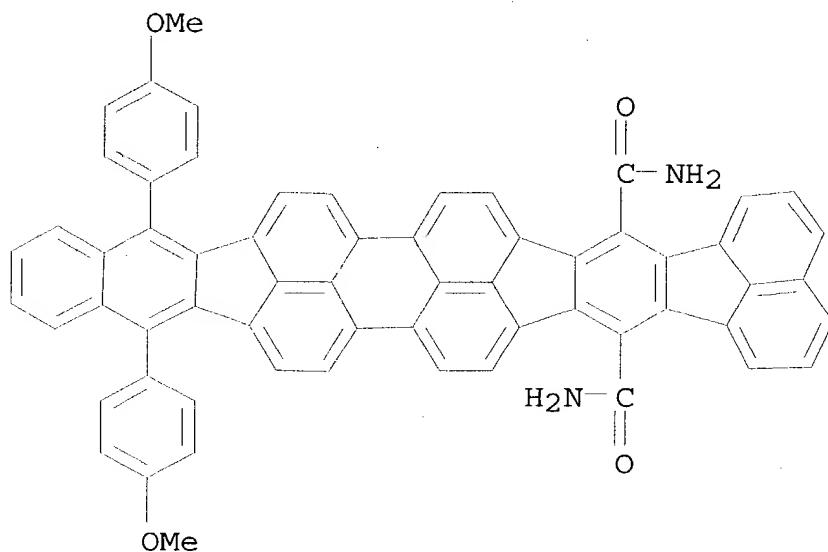


AB The devices have .gtoreq.1 layer(s) contg.
 acenaphtho[1',2':5,6]indeno[1,2,3-cd]benzo[5,6]indeno[1',2',3'-
 lm]perylene derivs. between a pair of electrodes. The derivs.
 comprise I [X1-X22 = H, halo, (un)substituted alkyl, alkoxy,
 alkylthio, alkenyl, alkenyloxy, alkenylthio, aralkyl, aralkyloxy,
 aralkylthio, aryl, aryloxy, arylthio, or amino, cyano, OH, NO2,
 CO2R1, COR2, OCOR3; R1 = H, (un)substituted alkyl, alkenyl, aralkyl,
 aryl; R2 = H, (un)substituted alkyl, alkenyl, aralkyl, or aryl,
 amino; R3 = (un)substituted alkyl, alkenyl, aralkyl, or aryl; X1-X22
 may form (un)substituted alicyclic group].

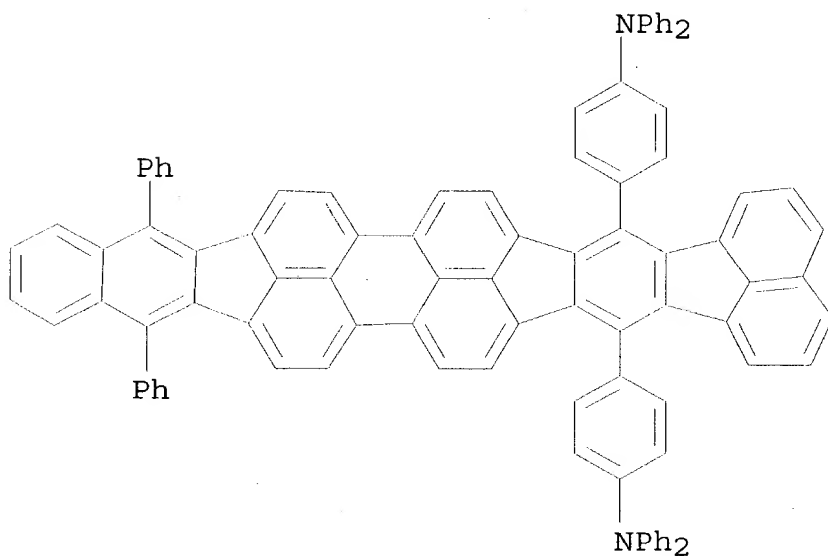
IT **256515-53-4P 256515-55-6P**
 (acenaphthoindenobenzoindenoperylene derivs. for high-
luminance org. electroluminescent
 devices)

RN 256515-53-4 ZCAPLUS

CN Benz[5,6]indeno[1,2,3-cd]naphth[1',8':5,6,7]-s-indaceno[1,2,3-
 lm]perylene-10,17-dicarboxamide, 5,22-bis(4-methoxyphenyl)- (9CI)
 (CA INDEX NAME)

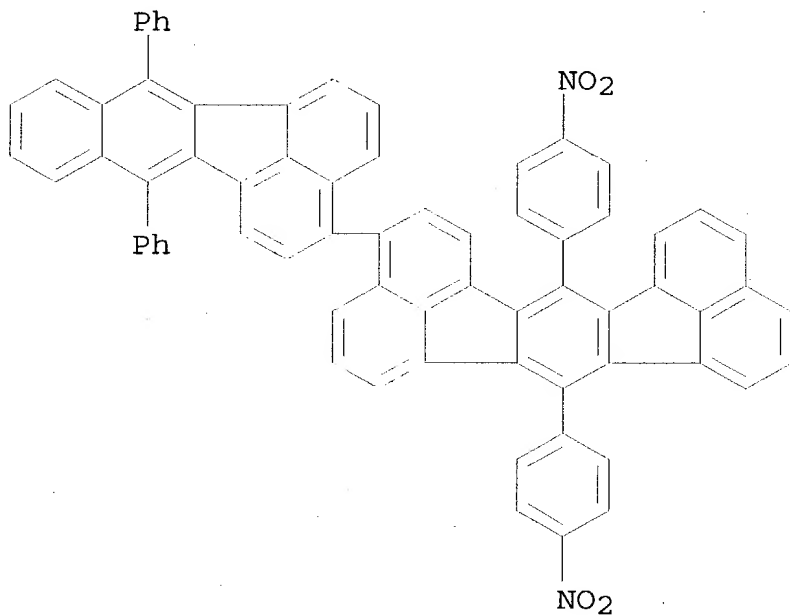


RN 256515-55-6 ZCAPLUS
 CN Benzenamine, 4,4'-(5,22-diphenylbenz[5,6]indeno[1,2,3-cd]naphth[1',8':5,6,7]-s-indaceno[1,2,3-lm]perylene-10,17-diyl)bis[N,N-diphenyl- (9CI) (CA INDEX NAME)



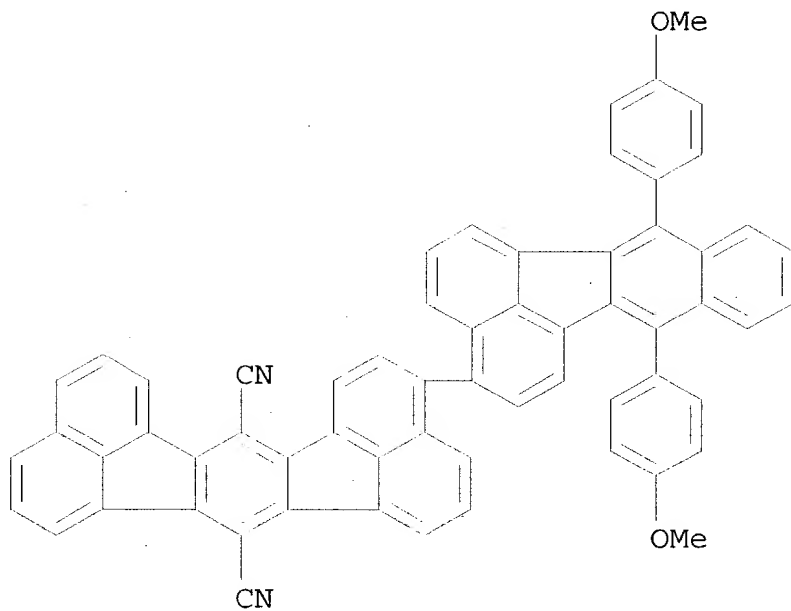
IT 256515-82-9 256516-11-7
 (acenaphthoindenobenzoindenoperylene derivs. for high-luminance org. electroluminescent devices)
 RN 256515-82-9 ZCAPLUS
 CN Acenaphtho[1,2-k]fluoranthene, 3-(7,12-diphenylbenzo[k]fluoranthene-3-

yl)-7,14-bis(4-nitrophenyl)- (9CI) (CA INDEX NAME)



RN 256516-11-7 ZCAPLUS

CN Acenaphtho[1,2-k]fluoranthene-7,14-dicarbonitrile,
3-[7,12-bis(4-methoxyphenyl)benzo[k]fluoranthene-3-yl]- (9CI) (CA
INDEX NAME)

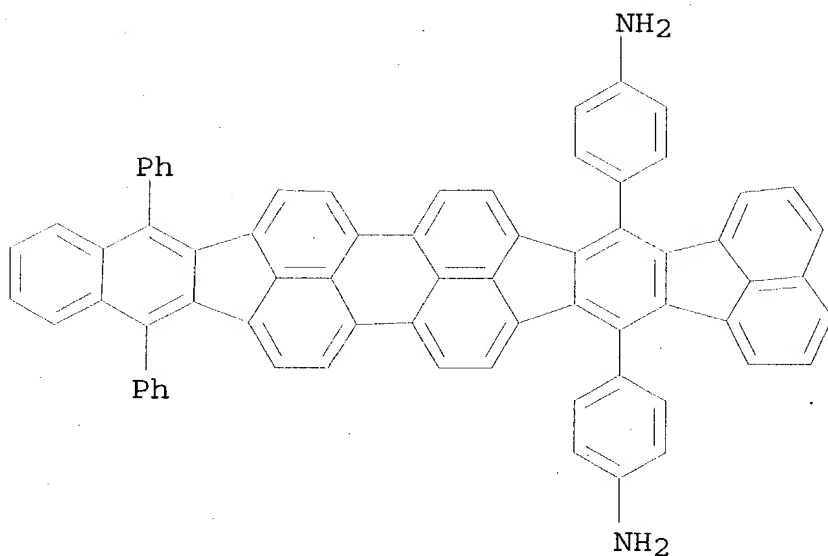


IT 256515-54-5P

(prepn. and N-phenylation of; acenaphthoindenobenzoindenoperylene
derivs. for high-luminance org.
electroluminescent devices)

RN 256515-54-5 ZCAPLUS

CN Benzenamine, 4,4'-(5,22-diphenylbenz[5,6]indeno[1,2,3-
cd]naphth[1',8':5,6,7]-s-indaceno[1,2,3-lm]perylene-10,17-diyl)bis-
(9CI) (CA INDEX NAME)

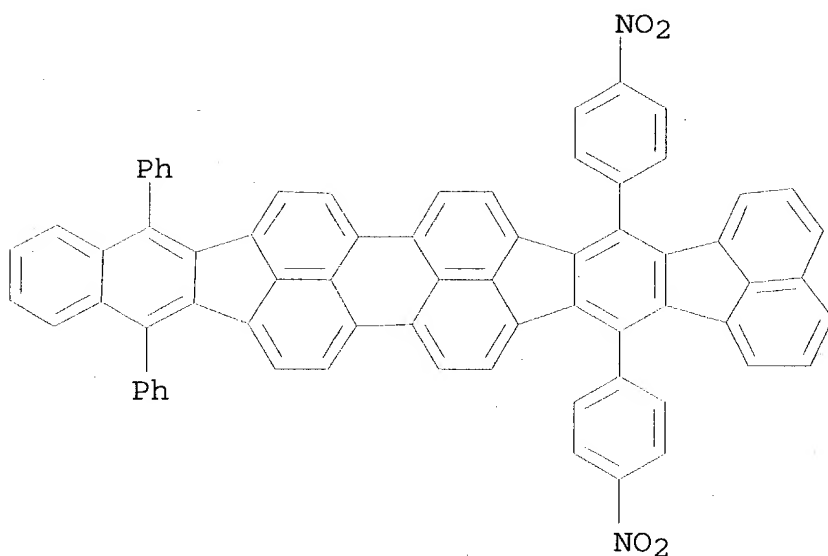


IT 256515-11-4P 256515-39-6P

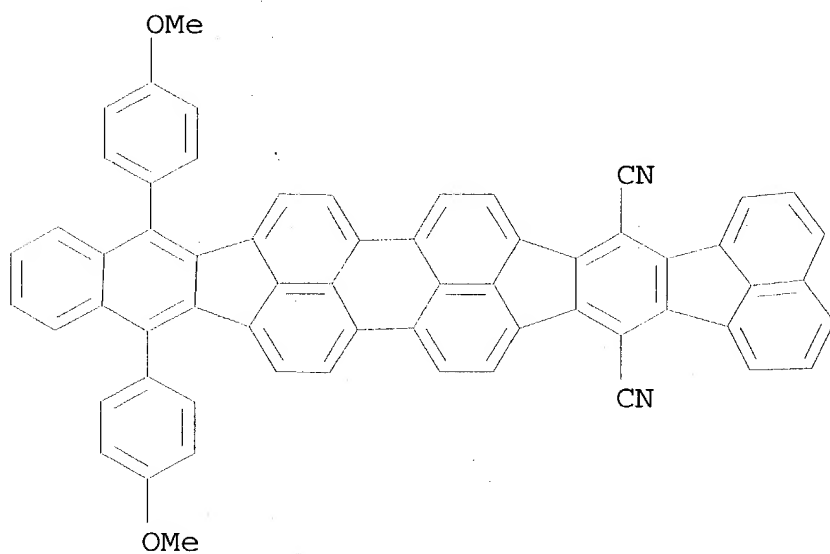
(prepn. and redn. of; acenaphthoindenobenzoindenoperylene derivs.
for high-luminance org.
electroluminescent devices)

RN 256515-11-4 ZCAPLUS

CN Benz[5,6]indeno[1,2,3-cd]naphth[1',8':5,6,7]-s-indaceno[1,2,3-
lm]perylene, 10,17-bis(4-nitrophenyl)-5,22-diphenyl- (9CI) (CA
INDEX NAME)



RN 256515-39-6 ZCAPLUS
 CN Benz[5,6]indeno[1,2,3-cd]naphth[1',8':5,6,7]-s-indaceno[1,2,3-lm]perylene-10,17-dinitrile, 5,22-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



IC ICM C07C013-62
 ICS C07C022-08; C07C025-22; C07C039-12; C07C043-21; C09K011-06;
 H05B033-14
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25

ST acenaphtho indeno benzo perylene **electroluminescent**
device; **luminance** improvement **org**
electroluminescent device acenaphthoindenobenzoindeoperylene

IT **Electroluminescent** devices
(acenaphthoindenobenzoindeoperylene derivs. for high-
luminance org. electroluminescent
devices)

IT 256514-88-2P 256514-90-6P 256514-91-7P 256514-92-8P
256514-93-9P 256514-94-0P 256514-95-1P 256514-96-2P
256514-97-3P 256514-98-4P 256515-00-1P 256515-01-2P
256515-02-3P 256515-03-4P 256515-04-5P 256515-05-6P
256515-06-7P 256515-07-8P 256515-08-9P 256515-09-0P
256515-10-3P 256515-12-5P 256515-13-6P 256515-14-7P
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256515-23-8P 256515-24-9P 256515-25-0P 256515-26-1P
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256515-41-0P 256515-43-2P 256515-44-3P 256515-45-4P
256515-46-5P 256515-49-8P 256515-50-1P 256515-51-2P
256515-52-3P **256515-53-4P 256515-55-6P**
256515-56-7P

(acenaphthoindenobenzoindeoperylene derivs. for high-
luminance org. electroluminescent
devices)

IT 591-50-4, Iodobenzene 153390-84-2 256515-57-8 256515-60-3
256515-61-4 256515-62-5 256515-63-6 256515-64-7 256515-65-8
256515-66-9 256515-67-0 256515-68-1 256515-69-2 256515-70-5
256515-71-6 256515-72-7 256515-73-8 256515-74-9 256515-75-0
256515-76-1 256515-77-2 256515-78-3 256515-79-4 256515-80-7
256515-81-8 **256515-82-9** 256515-83-0 256515-84-1
256515-85-2 256515-86-3 256515-87-4 256515-88-5 256515-89-6
256515-90-9 256515-91-0 256515-92-1 256515-93-2 256515-94-3
256515-95-4 256515-96-5 256515-97-6 256515-98-7 256515-99-8
256516-00-4 256516-01-5 256516-02-6 256516-03-7 256516-04-8
256516-05-9 256516-06-0 256516-07-1 256516-08-2 256516-09-3
256516-10-6 **256516-11-7** 256516-12-8 256516-13-9
256516-14-0 256516-15-1 256516-16-2 256516-17-3 256516-18-4

(acenaphthoindenobenzoindeoperylene derivs. for high-
luminance org. electroluminescent
devices)

IT **256515-54-5P**
(prepn. and N-phenylation of; acenaphthoindenobenzoindeoperylene
derivs. for high-**luminance org.**
electroluminescent devices)

IT 256515-47-6P 256515-48-7P
(prepn. and decarboxylation of; acenaphthoindenobenzoindeoperylene
derivs. for high-**luminance org.**
electroluminescent devices)

IT 256514-99-5P 256515-40-9P 256515-42-1P

(prepn. and hydrolysis of; acenaphthoindenobenzoindenoperylene
derivs. for high-luminance org.
electroluminescent devices)
IT 256515-11-4P 256515-39-6P
(prepn. and redn. of; acenaphthoindenobenzoindenoperylene derivs.
for high-luminance org.
electroluminescent devices)
IT 256515-59-0P
(prepn. and ring closure reaction of;
acenaphthoindenobenzoindenoperylene derivs. for high-
luminance org. electroluminescent
devices)
IT 256514-89-3P
(prepn. and thioarylation of; acenaphthoindenobenzoindenoperylene
derivs. for high-luminance org.
electroluminescent devices)
IT 75-33-2, Isopropyl mercaptan 108-98-5, Phenyl mercaptan, reactions
(reaction with perylene derivs.; acenaphthoindenobenzoindenoperyl
ene derivs. for high-luminance org.
electroluminescent devices)

L22 ANSWER 5 OF 6 ZCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:62604 ZCAPLUS

DOCUMENT NUMBER: 132:130074

TITLE: Organic electroluminescence device
having 3,3'-biacenaphtho[1,2-
.kappa.]fluoranthene derivative

INVENTOR(S): Nakatsuka, Masakatsu; Kitamoto, Noriko

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 100 pp.

CODEN: JKXXAF

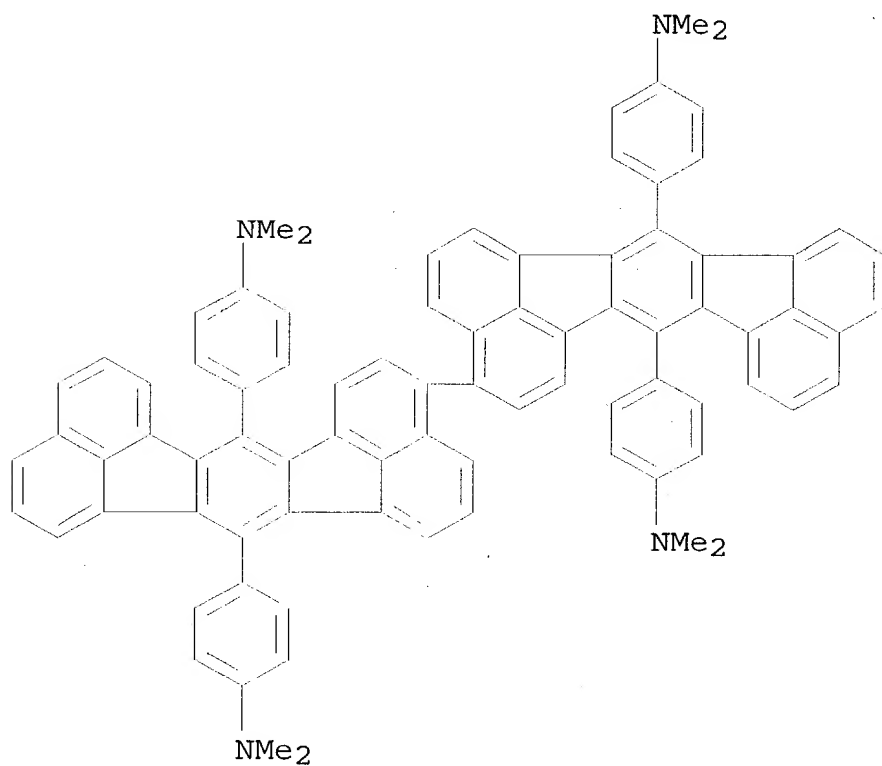
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

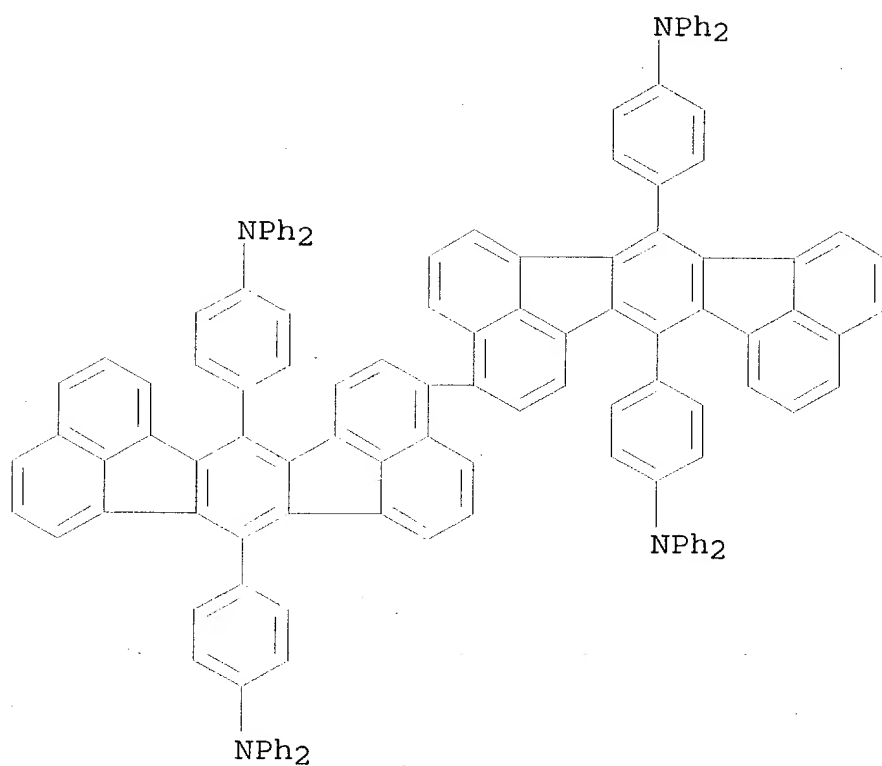
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

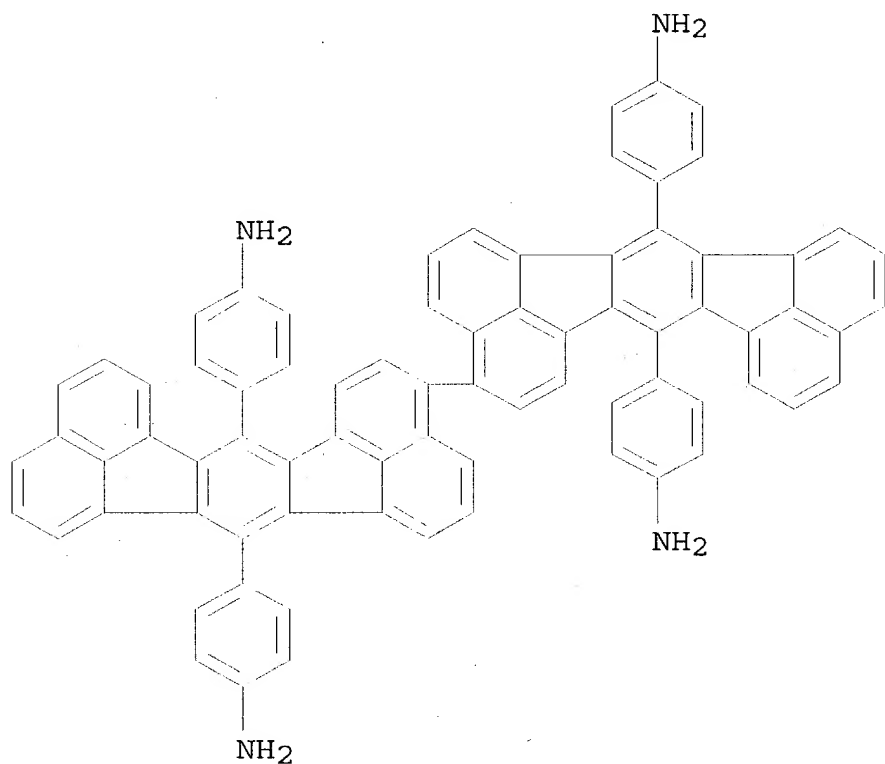
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 2000026325	A2	20000125	JP 1998-194430	19980709
AB	The org. electroluminescence device has a layer contg. 3,3'-biacenaphtho[1,2-.kappa.]fluoranthene deriv. between a pair of electrodes. The org. electroluminescence device provides the bright luminescence.				
IT	256328-37-7P 256328-38-8P 256328-50-4P 256328-53-7P 256328-54-8P 256328-55-9P 256328-56-0P 256328-63-9P (org. electroluminescence device having 3,3'-biacenaphtho[1,2-k]fluoranthene deriv.)				
RN	256328-37-7 ZCAPLUS				
CN	Benzenamine, 4,4',4'',4'''-[3,3'-biacenaphtho[1,2-k]fluoranthene]- 7,7',14,14'-tetrayltetrakis[N,N-dimethyl- (9CI) (CA INDEX NAME)				



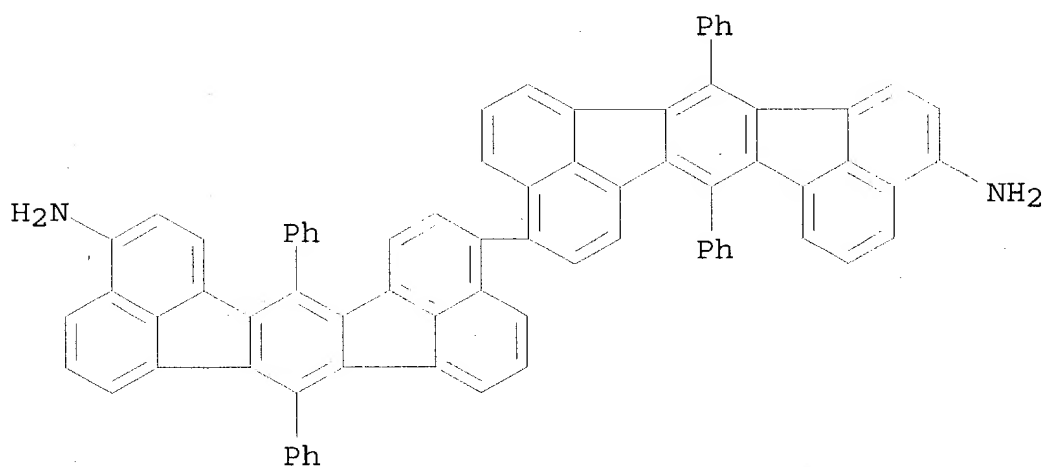
RN 256328-38-8 ZCAPLUS
CN Benzenamine, 4,4',4'',4'''-[3,3'-biacenaphtho[1,2-k]fluoranthene]-
7,7',14,14'-tetrayltetrakis[N,N-diphenyl- (9CI) (CA INDEX NAME)



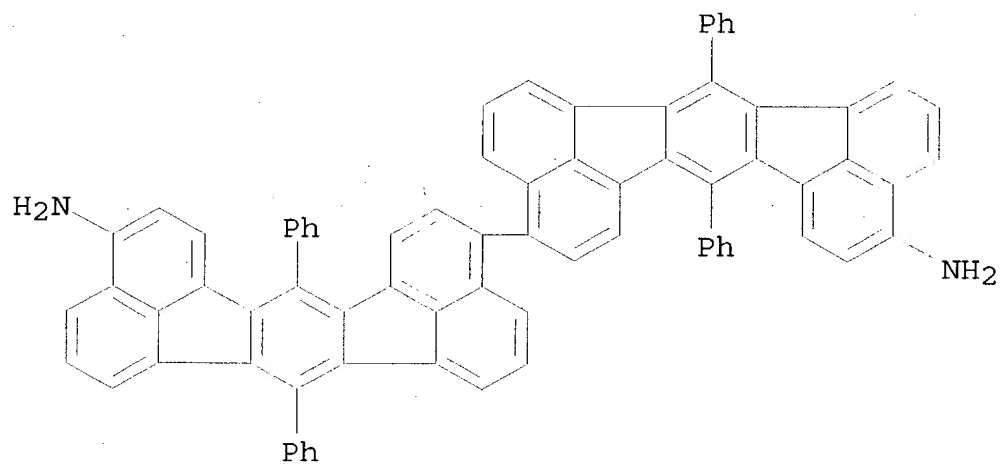
RN 256328-50-4 ZCAPLUS
CN Benzenamine, 4,4',4'',4'''-[3,3'-biacenaphtho[1,2-k]fluoranthene]-
7,7',14,14'-tetrayltetrakis- (9CI) (CA INDEX NAME)



RN 256328-53-7 ZCAPLUS
 CN [3,3'-Biacenaphtho[1,2-k]fluoranthene]-10,11'-diamine,
 7,7',14,14'-tetraphenyl- (9CI) (CA INDEX NAME)

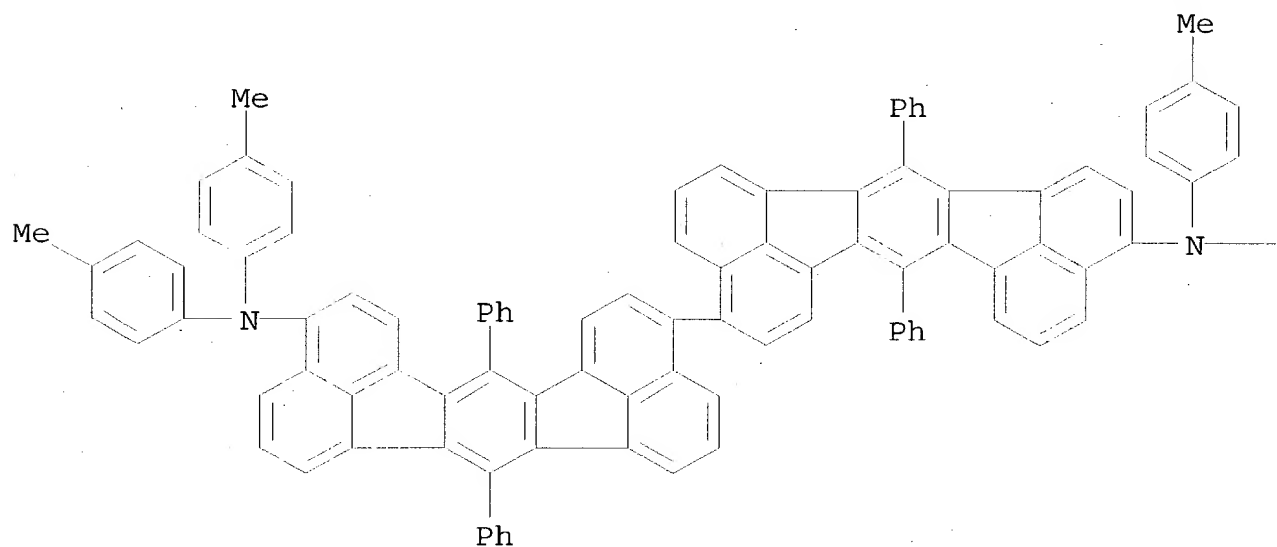


RN 256328-54-8 ZCAPLUS
 CN [3,3'-Biacenaphtho[1,2-k]fluoranthene]-11,11'-diamine,
 7,7',14,14'-tetraphenyl- (9CI) (CA INDEX NAME)

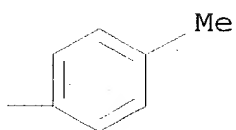


RN 256328-55-9 ZCAPLUS
 CN [3,3'-Biacenaphtho[1,2-k]fluoranthene]-10,11'-diamine,
 N,N,N',N'-tetrakis(4-methylphenyl)-7,7',14,14'-tetraphenyl- (9CI)
 (CA INDEX NAME)

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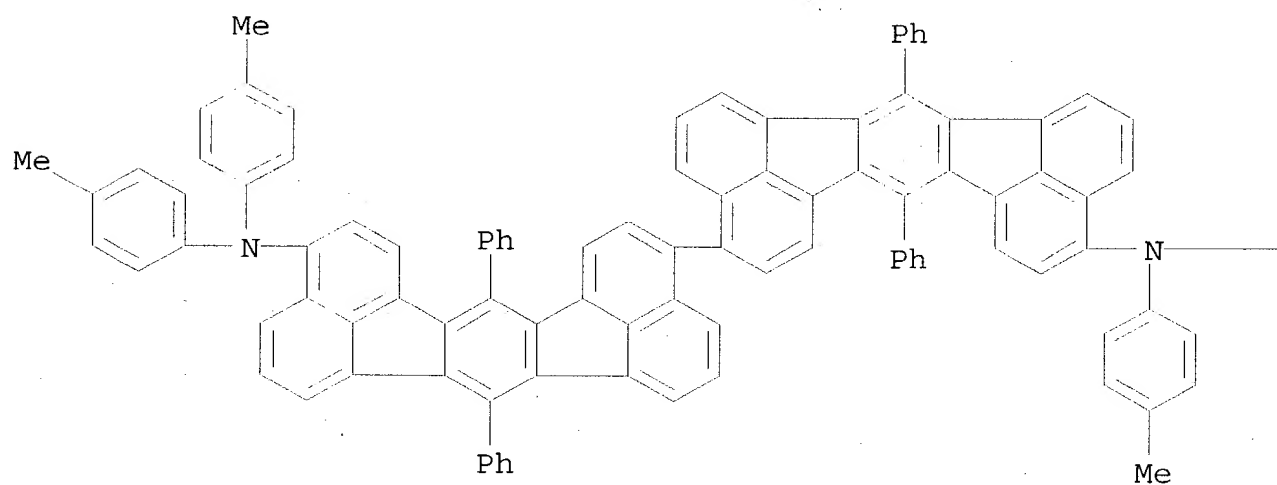


PAGE 1-B

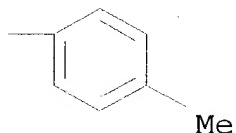


RN 256328-56-0 ZCAPLUS
CN [3,3'-Biacenaphtho[1,2-k]fluoranthene]-11,11'-diamine,
N,N,N',N'-tetrakis(4-methylphenyl)-7,7',14,14'-tetraphenyl- (9CI)
(CA INDEX NAME)

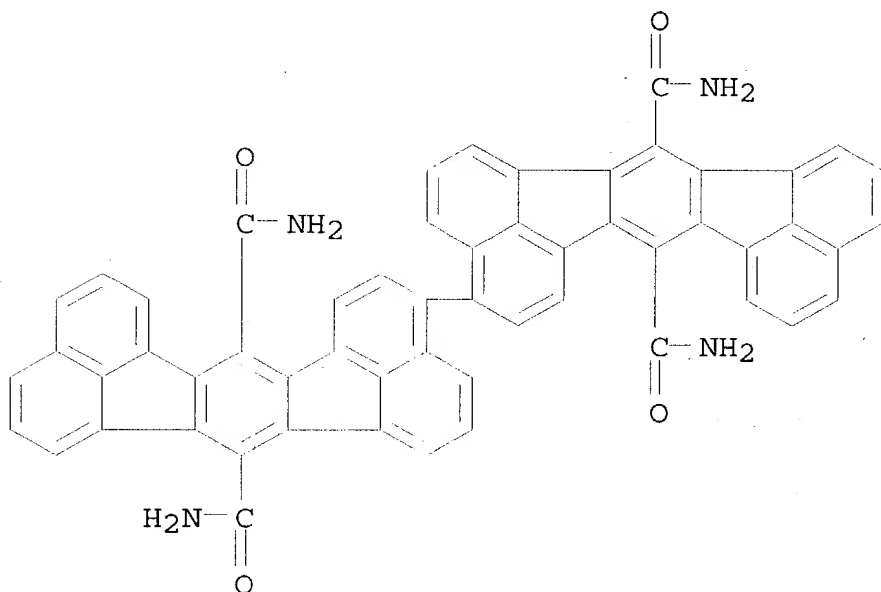
PAGE 1-A



PAGE 1-B



RN 256328-63-9 ZCAPLUS
CN [3,3'-Biacenaphtho[1,2-k]fluoranthene]-7,7',14,14'-tetracarboxamide
(9CI) (CA INDEX NAME)



IC ICM C07C013-62
ICS C07C022-04; C07C025-22; C07C025-24; C07C033-36; C07C039-12;
C07C043-168; C07C043-20; C07C047-546; C07C049-792; C07C063-46;
C07C069-33; C07C069-76; C07C205-11; C07C211-50; C07C233-65;
C07C255-52; C07C321-28; C09K011-06; H05B033-14
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 24, 73
ST org **electroluminescence** device fluoranthene
IT **Electroluminescent** devices
(org. **electroluminescence** device having

3,3'-biacenaphtho[1,2-k]fluoranthene deriv.)

IT 256327-97-6P 256328-06-0P, 3,3'-Biacenaphtho[1,2-k]fluoranthene
 256328-07-1P 256328-08-2P 256328-09-3P 256328-10-6P
 256328-11-7P 256328-12-8P 256328-13-9P 256328-14-0P
 256328-15-1P 256328-16-2P 256328-17-3P 256328-18-4P
 256328-19-5P 256328-20-8P 256328-21-9P 256328-22-0P
 256328-23-1P 256328-24-2P 256328-25-3P 256328-26-4P
 256328-27-5P 256328-28-6P 256328-29-7P 256328-30-0P
 256328-31-1P 256328-32-2P 256328-33-3P 256328-34-4P
 256328-35-5P 256328-36-6P **256328-37-7P**
256328-38-8P 256328-39-9P 256328-40-2P 256328-41-3P
 256328-42-4P 256328-43-5P 256328-44-6P 256328-45-7P
 256328-46-8P 256328-47-9P 256328-48-0P 256328-49-1P
256328-50-4P 256328-51-5P 256328-52-6P
256328-53-7P 256328-54-8P 256328-55-9P
256328-56-0P 256328-57-1P 256328-58-2P 256328-59-3P
 256328-60-6P 256328-61-7P 256328-62-8P **256328-63-9P**
 256328-64-0P
 (org. **electroluminescence** device having
 3,3'-biacenaphtho[1,2-k]fluoranthene deriv.)

IT 624-31-7, 4-Iodotoluene 1310-58-3, Potassium hydroxide, reactions
 10486-08-5, Sodium 4-Methylphenylthiolate 20607-43-6,
 Isopropylmercaptan sodium salt 153390-84-2 256327-96-5
 256327-98-7 256327-99-8 256328-00-4 256328-01-5 256328-02-6
 256328-03-7 256328-04-8 256328-05-9
 (org. **electroluminescence** device having
 3,3'-biacenaphtho[1,2-k]fluoranthene deriv.)

L22 ANSWER 6 OF 6 ZCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:59110 ZCAPLUS

DOCUMENT NUMBER: 132:129799

TITLE: Perylene derivatives and high-luminance organic
electroluminescent devices using them

INVENTOR(S): Nakatsuka, Masakatsu; Kitamoto, Noriko

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 101 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

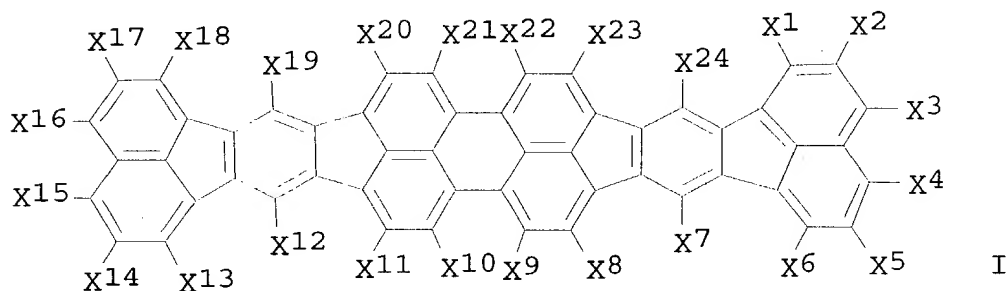
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

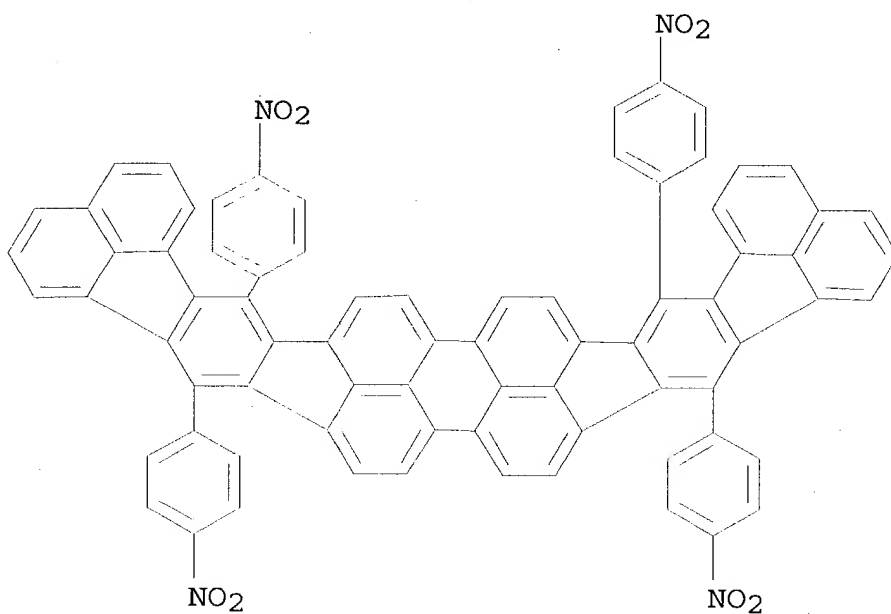
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000026324	A2	20000125	JP 1998-187708	19980702
OTHER SOURCE(S): MARPAT 132:129799				

GI

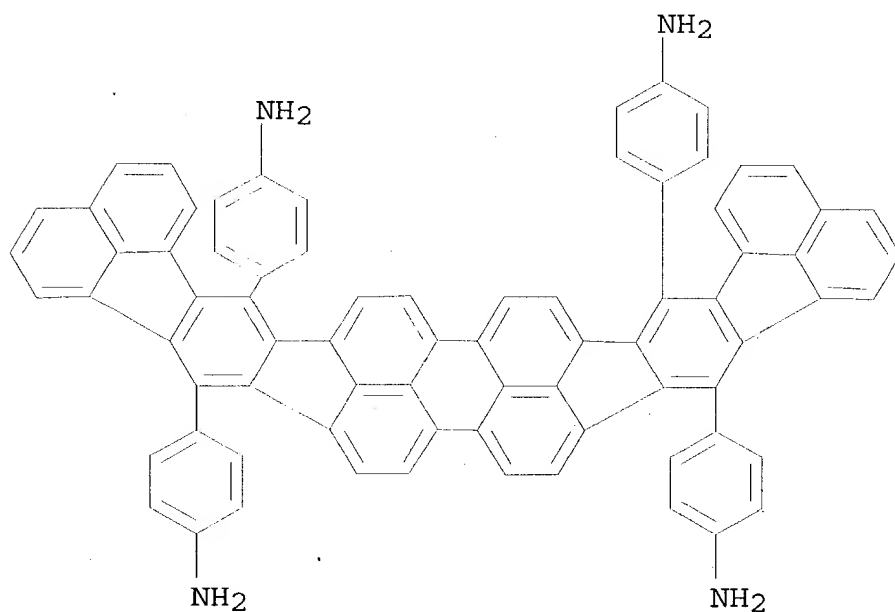


- AB The devices have .gtoreq.1 layer(s) contg.
bisacenaphto[1',2':5,6]indeno[1,2,3-cd:1',2',3'-lm]perylene derivs.
between a pair of electrodes. The derivs. comprise I [X1-X24 = H,
halo, (un)substituted alkyl, alkoxy, alkylthio, alkenyl, alkenyloxy,
alkenylthio, aralkyl, aralkyloxy, aralkylthio, aryl, aryloxy,
arylthio, or amino, cyano, OH, NO₂, CO₂R₁, COR₂, OCOR₃; R₁ = H,
(un)substituted alkyl, alkenyl, aralkyl, aryl; R₂ = H,
(un)substituted alkyl, alkenyl, aralkyl, or aryl, amino; R₃ =
(un)substituted alkyl, alkenyl, aralkyl, or aryl; X1-X24 may form
(un)substituted alicyclic group].
- IT 256333-46-7P 256333-48-9P 256333-50-3P
256333-51-4P 256333-52-5P 256333-53-6P
256333-56-9P
(bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)
- RN 256333-46-7 ZCAPLUS
- CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene,
4,9,16,21-tetrakis(4-nitrophenyl)- (9CI) (CA INDEX NAME)



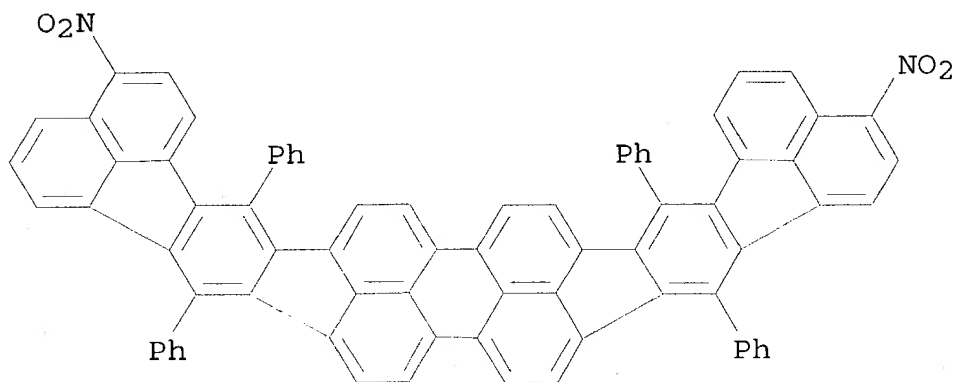
RN 256333-48-9 ZCAPLUS

CN Benzenamine, 4,4',4'',4'''-bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-4,9,16,21-tetrayltetrakis- (9CI) (CA INDEX NAME)



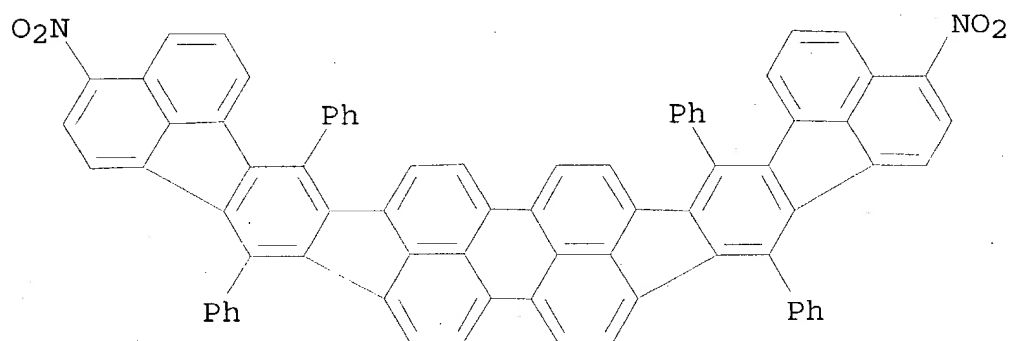
RN 256333-50-3 ZCAPLUS

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene, 1,13-dinitro-4,9,16,21-tetraphenyl- (9CI) (CA INDEX NAME)



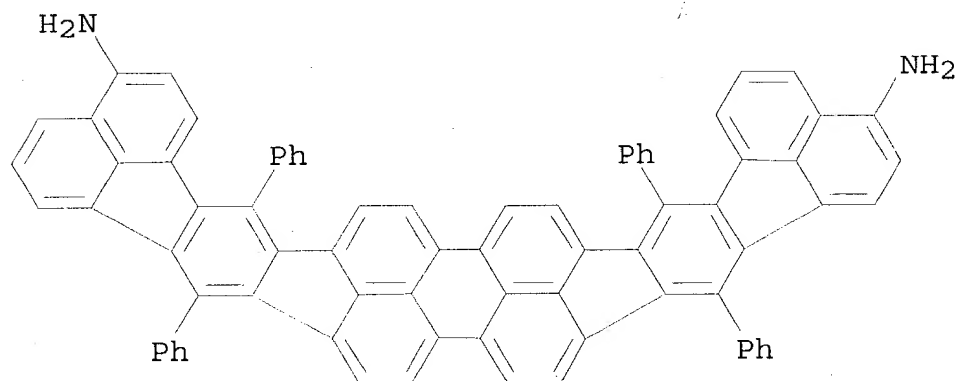
RN 256333-51-4 ZCAPLUS

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene,
1,12-dinitro-4,9,16,21-tetraphenyl- (9CI) (CA INDEX NAME)



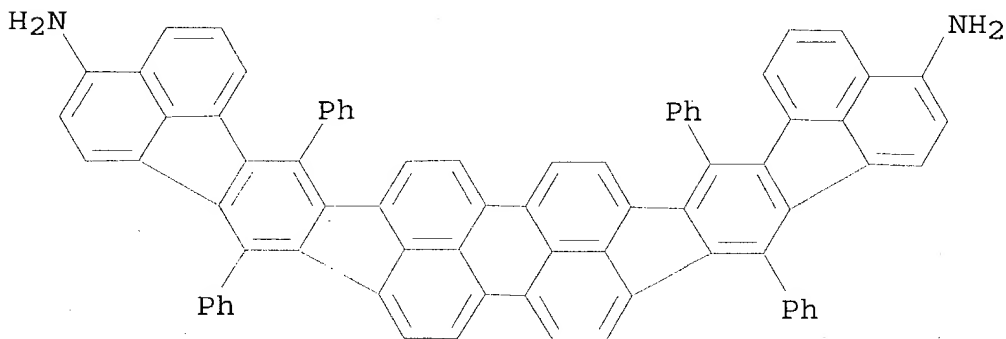
RN 256333-52-5 ZCAPLUS

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-1,13-
diamine, 4,9,16,21-tetraphenyl- (9CI) (CA INDEX NAME)



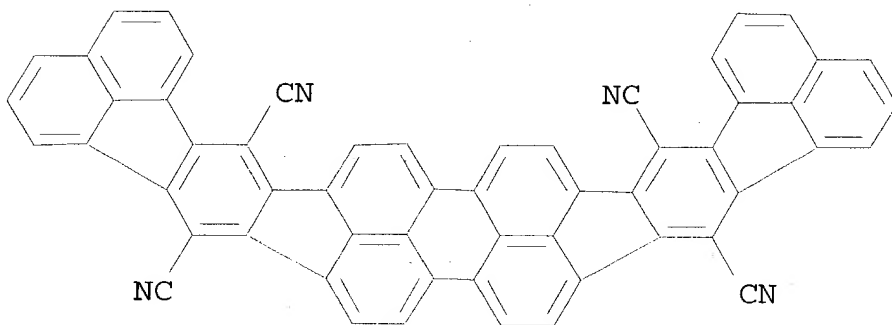
RN 256333-53-6 ZCAPLUS

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-1,12-diamine, 4,9,16,21-tetraphenyl- (9CI) (CA INDEX NAME)



RN 256333-56-9 ZCAPLUS

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-4,9,16,21-tetracarbonitrile (9CI) (CA INDEX NAME)



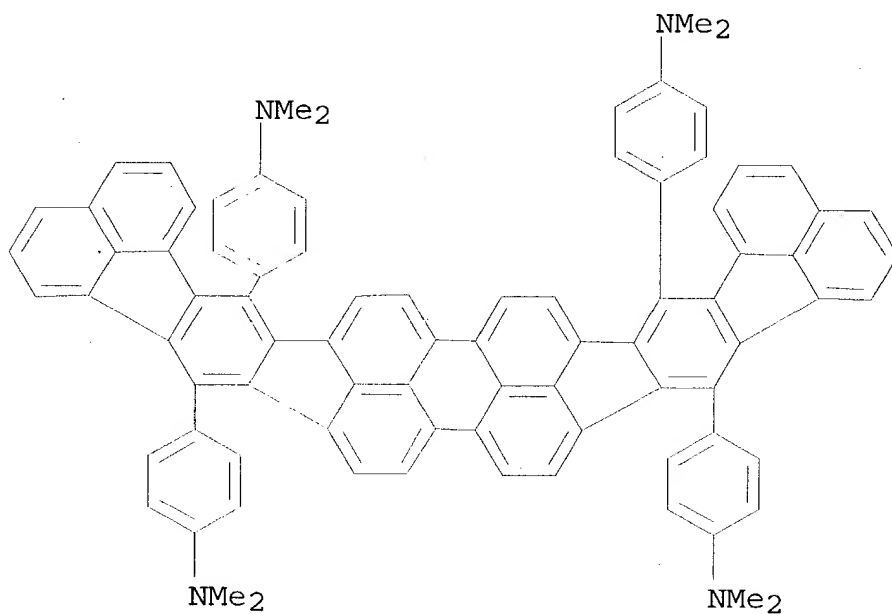
IT 256331-16-5P 256332-24-8P 256333-54-7P

256333-55-8P 256334-65-3P

(bis(acenaphthoindeno)perylene derivs. for high-luminance org. electroluminescent devices)

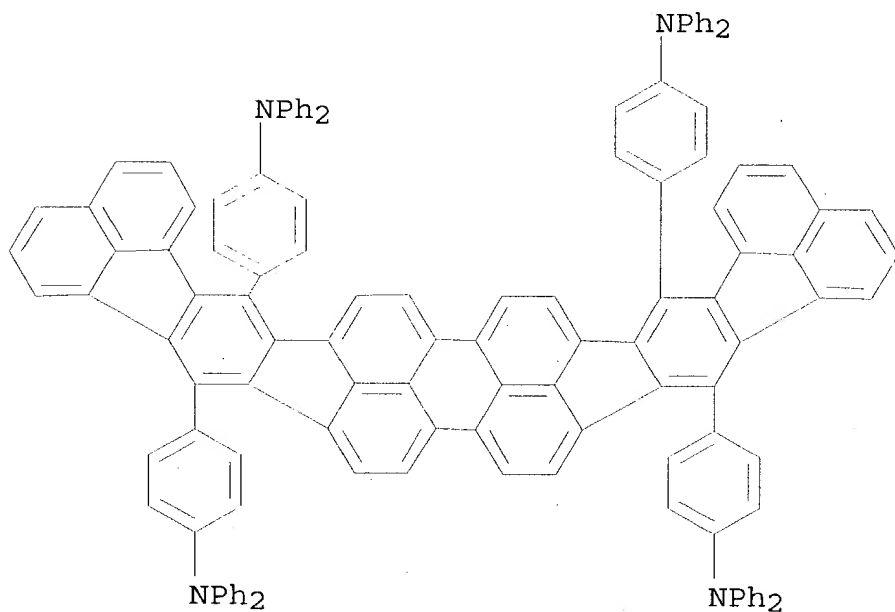
RN 256331-16-5 ZCAPLUS

CN Benzenamine, 4,4',4'',4'''-bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-4,9,16,21-tetrayltetrakis[N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 256332-24-8 ZCAPLUS

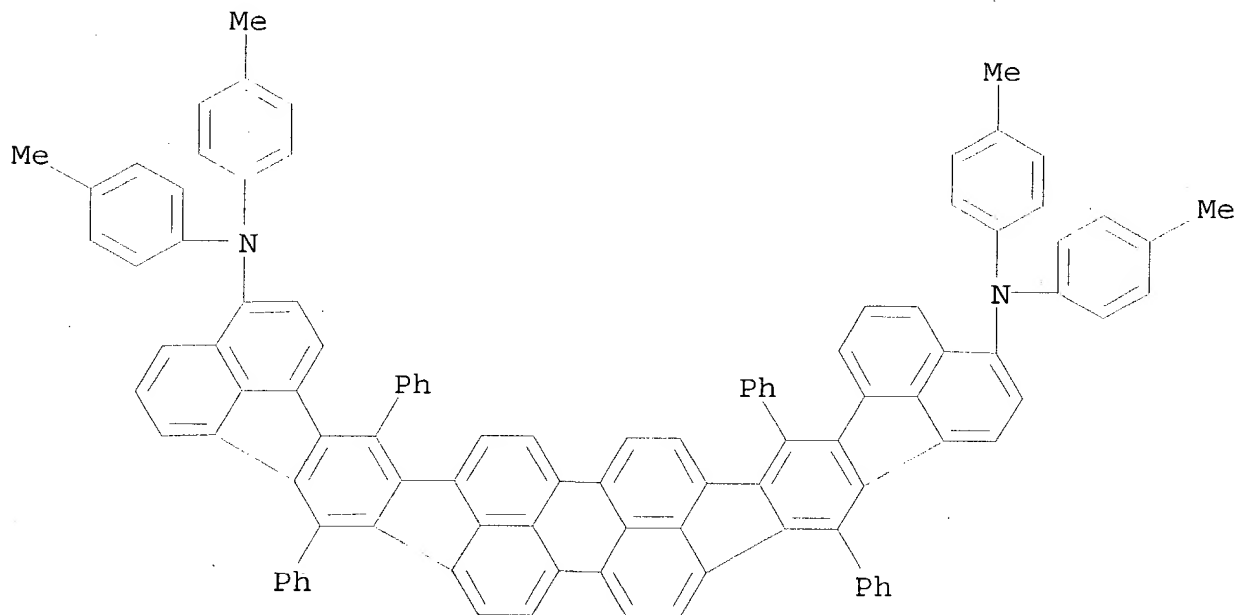
CN Benzenamine, 4,4',4'',4'''-bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-4,9,16,21-tetrayltetrakis[N,N-diphenyl-(9CI) (CA INDEX NAME)



RN 256333-54-7 ZCAPLUS

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-1,13-diamine, N,N,N',N'-tetrakis(4-methylphenyl)-4,9,16,21-tetraphenyl-

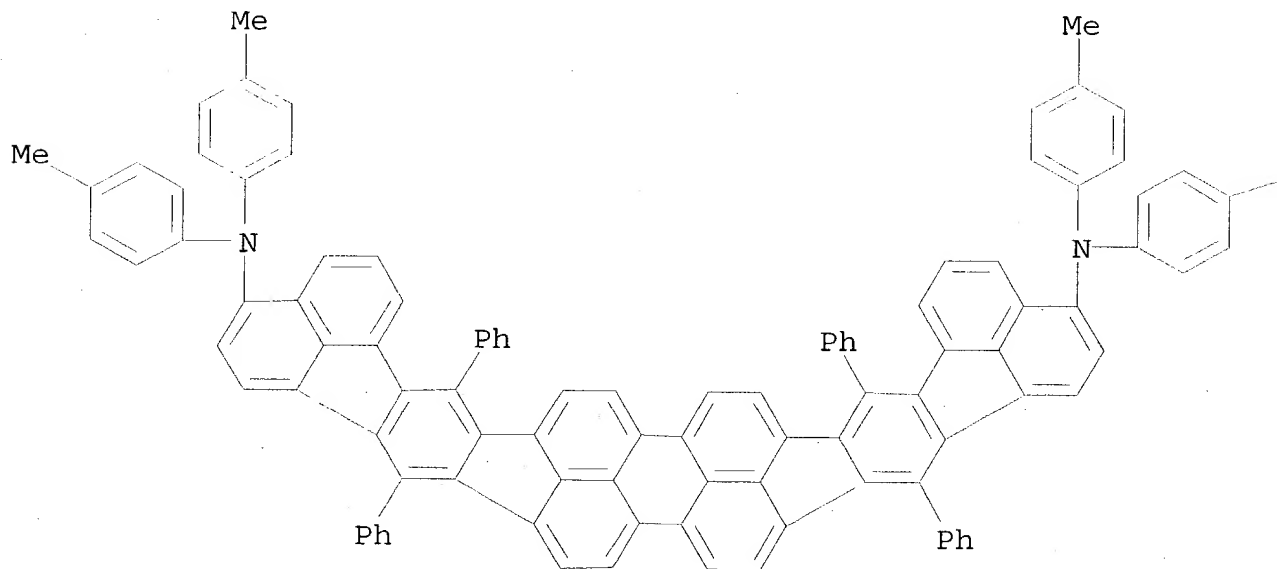
(9CI) (CA INDEX NAME)



RN 256333-55-8 ZCAPLUS

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-1,12-diamine, N,N,N',N'-tetrakis(4-methylphenyl)-4,9,16,21-tetraphenyl-
(9CI) (CA INDEX NAME)

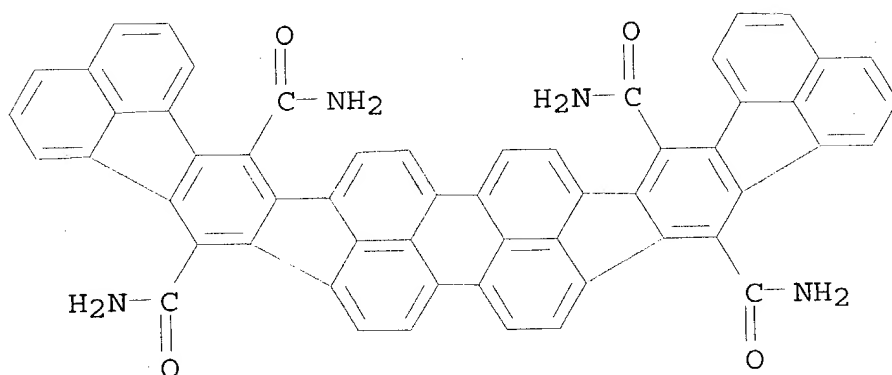
PAGE 1-A



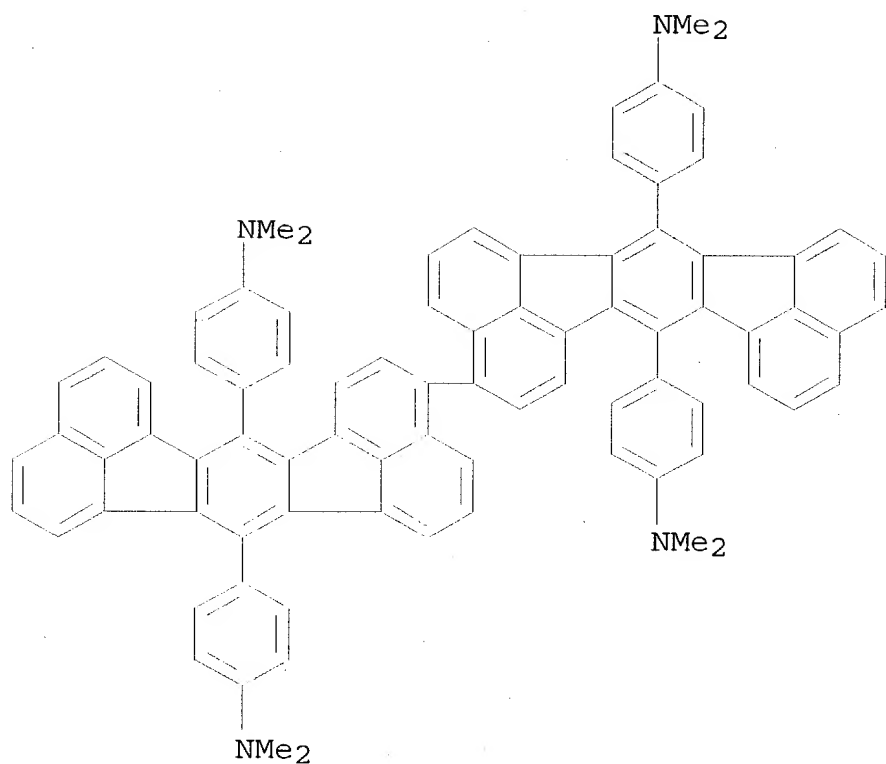
PAGE 1-B

Me

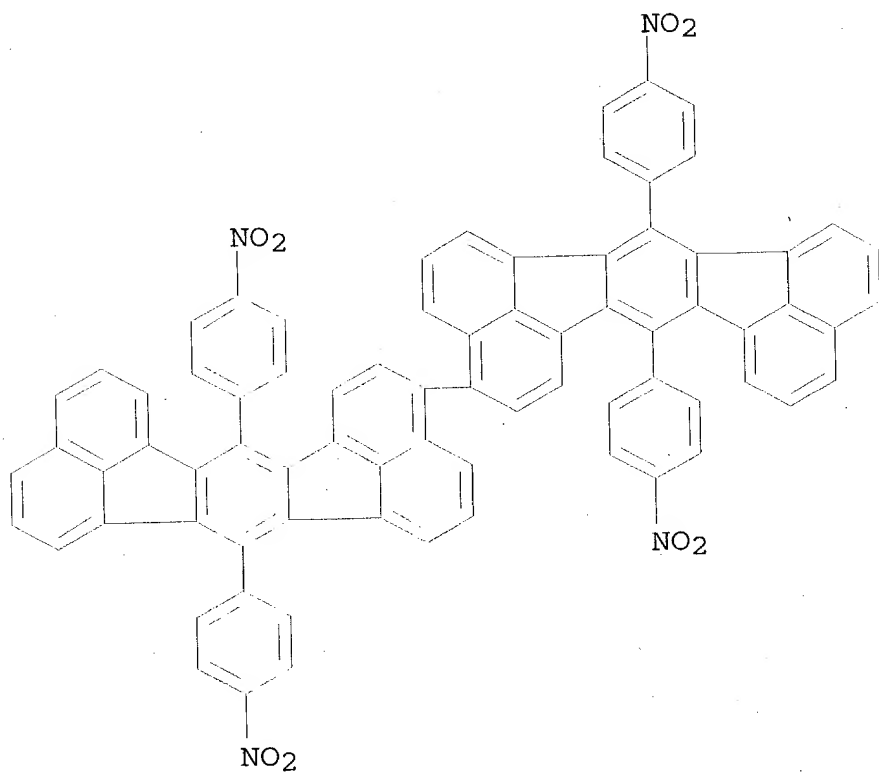
RN 256334-65-3 ZCAPLUS
 CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-
 4,9,16,21-tetracarboxamide (9CI) (CA INDEX NAME)



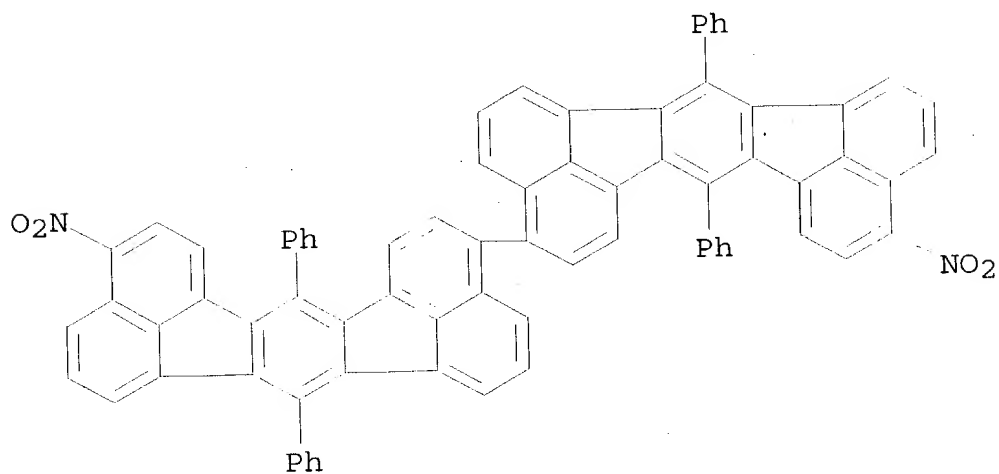
IT 256328-37-7 256342-79-7 256343-03-0
 256343-07-4 256343-08-5
 (bis(acenaphthoindeno)perylene derivs. for high-luminance
 org. electroluminescent devices)
 RN 256328-37-7 ZCAPLUS
 CN Benzenamine, 4,4',4'',4'''-[3,3'-biacenaphtho[1,2-k]fluoranthene]-
 7,7',14,14'-tetrayltetrakis[N,N-dimethyl- (9CI) (CA INDEX NAME)



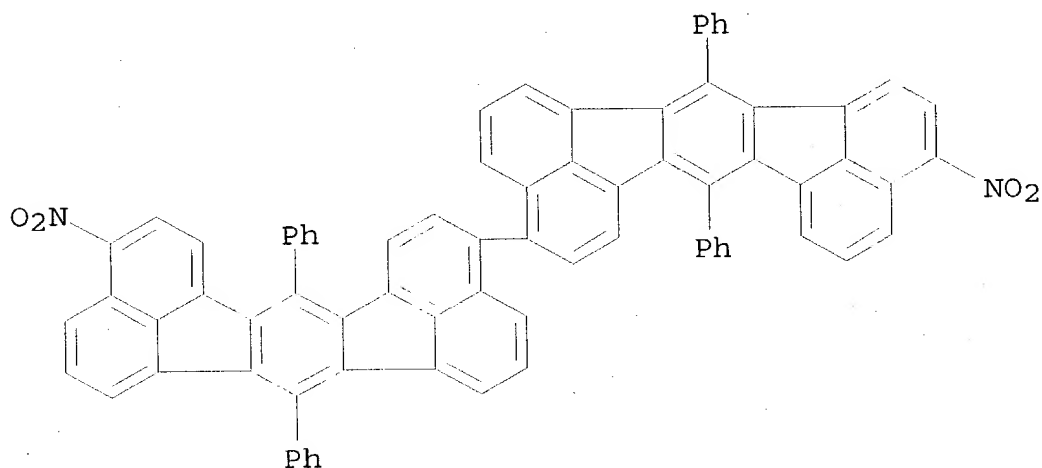
RN 256342-79-7. ZCAPLUS
CN 3,3'-Biacenaphtho[1,2-k]fluoranthene, 7,7',14,14'-tetrakis(4-nitrophenyl)- (9CI) (CA INDEX NAME)



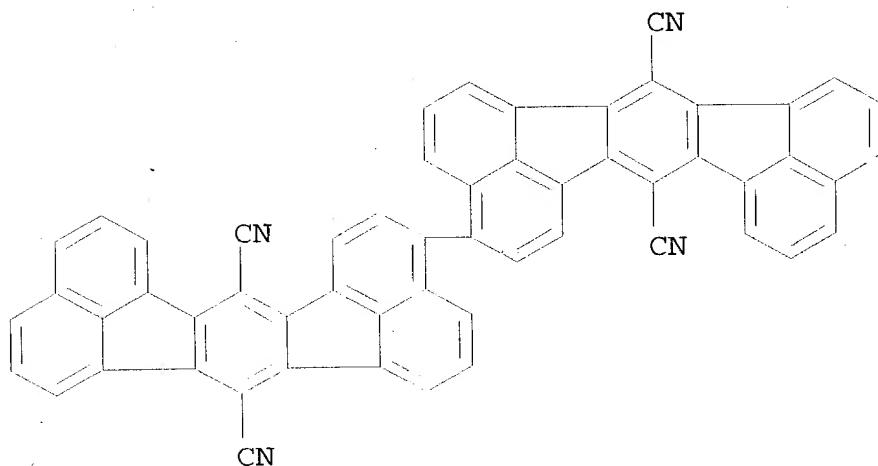
RN 256343-03-0 ZCAPLUS
 CN 3,3'-Biacenaphtho[1,2-k]fluoranthene, 11,11'-dinitro-7,7',14,14'-tetraphenyl- (9CI) (CA INDEX NAME)



RN 256343-07-4 ZCAPLUS
 CN 3,3'-Biacenaphtho[1,2-k]fluoranthene, 10,11'-dinitro-7,7',14,14'-tetraphenyl- (9CI) (CA INDEX NAME)



RN 256343-08-5 ZCAPLUS
 CN [3,3'-Biacenaphtho[1,2-k]fluoranthene]-7,7',14,14'-tetracarbonitrile
 (9CI) (CA INDEX NAME)



IC ICM C07C013-62
 ICS C07C022-04; C07C025-22; C07C043-174; C07C043-21; C07C043-215;
 C07C043-225; C07C043-275; C07C047-546; C07C063-49; C07C069-78;
 C07C205-06; C07C211-50; C07C211-54; C07C255-52; C07C321-28;
 C09K011-06
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 Section cross-reference(s): 25
 ST acenaphtho indeno perylene **electroluminescent** device;
luminance improvement **org**
electroluminescent device acenaphthoindenoperylene

IT **Electroluminescent devices**
 (bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)

IT 2085-33-8 24601-13-6 123847-85-8 146162-48-3 146162-52-9
 169224-62-8
 (bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)

IT 256329-34-7P 256329-36-9P 256330-85-5P 256333-36-5P
256333-46-7P 256333-48-9P 256333-50-3P
256333-51-4P 256333-52-5P 256333-53-6P
256333-56-9P 256333-58-1P 256333-59-2P
 (bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)

IT 231632-01-2P 256329-38-1P 256329-40-5P 256329-42-7P
 256329-43-8P 256329-44-9P 256329-48-3P 256329-49-4P
 256329-51-8P 256329-52-9P 256329-54-1P 256329-60-9P
 256330-81-1P 256330-83-3P 256330-84-4P 256330-86-6P
 256330-87-7P 256330-89-9P 256330-90-2P 256330-91-3P
 256330-92-4P 256330-93-5P 256330-94-6P 256330-95-7P
 256330-96-8P 256330-97-9P 256330-98-0P 256330-99-1P
 256331-00-7P 256331-01-8P 256331-02-9P 256331-03-0P
 256331-04-1P 256331-05-2P 256331-07-4P 256331-12-1P
 256331-15-4P **256331-16-5P 256332-24-8P**
 256332-27-1P 256332-28-2P 256332-29-3P 256332-31-7P
 256332-77-1P 256332-78-2P 256333-22-9P 256333-24-1P
 256333-25-2P 256333-26-3P 256333-27-4P 256333-28-5P
 256333-33-2P 256333-34-3P 256333-38-7P 256333-40-1P
 256333-45-6P 256333-47-8P 256333-49-0P **256333-54-7P**
256333-55-8P 256333-57-0P 256334-57-3P 256334-58-4P
 256334-59-5P 256334-60-8P 256334-61-9P 256334-62-0P
256334-65-3P 256343-53-0P 256343-54-1P
 (bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)

IT 230636-45-0 256330-88-8
 (bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)

IT 256327-97-6P
 (bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)

IT 591-50-4, Iodobenzene 624-31-7, 4-Iodotoluene 10486-08-5
 20607-43-6, Isopropylmercaptan sodium salt 256327-96-5
 256328-08-2 256328-09-3 256328-10-6 256328-11-7 256328-12-8
 256328-13-9 256328-14-0 256328-15-1 256328-16-2 256328-17-3
 256328-18-4 256328-19-5 256328-26-4 256328-27-5 256328-30-0
 256328-31-1 256328-32-2 256328-33-3 256328-34-4 256328-35-5
 256328-36-6 **256328-37-7** 256328-39-9 256328-40-2
 256328-41-3 256328-42-4 256328-43-5 256328-44-6 256328-45-7
 256328-46-8 256328-47-9 256328-48-0 256328-51-5 256328-52-6
 256328-58-2 256328-60-6 256328-61-7 256328-62-8 256328-64-0
 256335-10-1 256335-11-2 256335-12-3 256335-13-4 256335-32-7
 256337-55-0 256337-68-5 256337-69-6 256337-70-9 256337-73-2
 256337-74-3 256337-75-4 256337-77-6 256337-78-7 256337-83-4

256342-76-4 256342-77-5 256342-78-6 256342-79-7
256343-03-0 256343-07-4 256343-08-5
256343-09-6 256343-10-9 256343-14-3 256343-15-4 256343-55-2
(bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)